

I CLAIM:

1. A method for analyzing specified properties of a set of substances, the method comprising:
 - a. providing a platen having two substantially parallel planar surfaces, an inner layer of hydrophilic material and two outer layers of hydrophobic material coupled to opposite sides of the inner layer, and a two-dimensional array of addressable through-holes having an areal density of at least 1.6 through-holes per square millimeter,
 - b. retaining a set of distinct substances in respective through-holes of the array in such a manner that a first through-hole contains a first substance distinct from a second substance contained in an adjacent through-hole to the first through-hole;
 - c. adding a liquid into at least one of the through-holes containing a substance for permitting a reaction between the liquid and the substance; and
 - d. characterizing contents of distinct through-holes in terms of the specified properties.
2. A method according to claim 1, wherein the set of different substances includes a reagent.
3. A method according to claim 1, wherein the set of different substances comprises a library of at least 1000 substances.
4. A method according to claim 1, wherein the set of different substances include optical taggants.
5. A method according to claim 1, wherein the step of retaining the set of distinct substances further includes:
 - loading the set of distinct substances in one of liquid solution and suspension; and

forming coatings of the distinct substances so as to retain the distinct substances on walls of the through-holes.

6. A method according to claim 1, wherein the step of adding a liquid includes adding a liquid substantially uniformly to the through-holes of the array.
7. A method according to claim 6, wherein the step of adding a liquid includes resuspending the distinct substances in liquid by means of wetting.
8. A method according to claim 1, wherein the step of characterizing contents of distinct through-holes includes characterizing by optical methods.
9. A method according to claim 8, wherein the step of characterizing contents of distinct through-holes includes characterizing by fluorometric methods.
10. A platen for retaining biological samples, the platen comprising:
 - a. an inner layer of hydrophilic material and two outer layers of hydrophobic material coupled to opposite sides of the inner layer;
 - b. a two-dimensional array of addressable through-holes having an areal density of at least 1.6 through-holes per square millimeter,
 - c. a set of distinct substances in respective through-holes of the array.
11. A platen according to claim 10, wherein distinct substances of the set of distinct substances are coated on walls of the through-holes.
12. A platen according to claim 10, wherein distinct substances of the the set of distinct substances are retained within through-holes of the platen by surface tension.